

REMARKS

I. Pending Claims

Claims 1-22 were pending in the application as originally filed. Claims 1, 4, 5, 7, 10, 11, 13, and 16 have been amended. Claims 23-31 are being added in this amendment. Based upon the remarks below, allowance of the claims is respectfully requested.

II. Amendments To The Claims

Claims 1, 7, and 13 have been amended, to broaden the claims, by removing the recitation of "said first duct having a first bead," and all related language.

Claims 4 and 10 have been amended to change "third bead" to "second bead" in view of the amendments to Claims 1 and 7, respectively, for the purposes of providing proper antecedent basis. These amendments to the claims do not narrow the scope of the claims.

Claims 5 and 11 have been amended to depend from claims 4 and 10, respectively, in order to maintain proper antecedent basis. These amendments to the claims do not narrow the scope of the claims.

Claim 16 has been amendment to change "second bead" to "bead" in view of the amendments to Claim 13, for the purposes of providing proper antecedent basis. This amendment to the claim does not narrow the scope of the claim.

Attached hereto is a marked-up version of the changes made to the claims by the current amendment. The attached page is captioned "Version with markings to show changes made."

III. Claim Rejections Under 35 U.S.C. § 102(e)

a. The Priority Date Of Claims 1-6 and 13-22 Pre-dates The Effective 102(e) Date Of The Reference At Issue

In the Final Office Action of the parent application, Claims 1, 2, 4-8, 10-14, and 18-22 were rejected under 35 U.S.C. 102(e) as being unpatentable over Mattsson et al. (U.S. Patent No. 6,170,883).

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Mattsson et al. was filed in the United States Patent Trademark Office (UPTO) on November 4, 1999. Therefore, the effective date under 35 U.S.C. 102(e)(2) of Mattsson et al. is November 4, 1999.

The instant application claims is a continuation-in-part of US Patent Application Serial No. 09/223,044, now issued as US Patent No. 6,193,285, on December 30, 1998. Therefore, the filing date of US Patent Application Serial No. 09/223,044 predates the filing date of Mattsson et al. A copy of US Patent Application Serial No. 09/223,044 is included in an Informational Disclosure Statement filed herewith.

US Patent Application Serial No. 09/223,044 contained Figures 1-7, which are the same as Figures 1-6A and 7 of the instant application. Moreover, the Detailed Description of the instant application, from page 6, line 1 to page 9, line 30, and at page 10, lines 7-13, is the same as the Detailed Description of US Patent Application Serial No. 09/223,044.

Applicants respectfully submit that Claim 1-6 and 13-22 were fully supported by the disclosure and figures of US Patent Application Serial No. 09/223,044. Therefore, Claims 1-6 and 13-22 are entitled to a filing date of December 30, 1998, which is prior to the effective date, under 35 U.S.C. 102(e)(2), of Mattsson et al. Claims 1-6 and 13-22 are therefore allowable for at least this reason.

b. Claims 7-12

In the Final Office Action of the parent application, Claims 7-12 were rejected under 35 U.S.C. 102(e) as being unpatentable over Mattsson et al. The rejection is traversed because Mattsson et al. do not disclose "a flexible seal and locking mechanism retained within said female end of said first duct" and do not provide that a "flexible seal and locking mechanism expanding into said first bead to form both a seal and a mechanical lock that provides resistance to the separation of said first duct and said second duct," as recited in Claim 7.

In particular, the Examiner states that in Mattsson et al. the "flexible seal inherently provides resistance to the separation of said first duct and said second duct to lock the first and second duct together," and that this "is accomplished when 16 is forced to bend in the

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opposite direction illustrated in Mattsson's figure 6." (Official Action at Page 7). Applicants respectfully submit that this is not the case. First, Mattsson et al. state that:

"... since the sealing ring of the invention is disposed in a groove, it is far more easy to fix the same *before the fastening operation* compared to the known sealing ring placed on a raised step." (Emphasis added). (Col. 2, l. 66 – Col. 3, l. 2).

"... sealing ring base is disposed in the groove between defined shoulders of the same, which means that *the sealing ring is safely kept in place during the fastening operation.*" (Emphasis added). (Col. 3, l. 8-10).

These statements indicate that Mattsson et al. require a subsequent fastening operation for locking the ducts in place, separate and apart from the use of sealing ring 10.

In addition, Applicants respectfully submit that sealing lip 16 covers only a small portion of the cross-section of outer tube 21 and cannot serve as a locking mechanism. Specifically, Mattsson et al. state that because of "helical lock seam 22, there is a small helical groove 23 on the inside of the outer tube 21." (Col. 5, ll. 14-15). "[I]ntermediate sealing lip 16 seals against the inside of the outer tube 21 and is particularly adapted to seal the helical groove 23, which in certain cases may cause leakage if not sealed." (Col. 5, ll. 15-18). However, "the main sealing function is of course provided by the larger sealing lip 14," (Col. 5, ll. 19-20), and not lip 15 or intermediate sealing lip 16. These statements clearly indicate that sealing ring 16 only provides a minor sealing function, and is incapable of providing a major sealing function let along a locking function.

Claims 8-12 depend from Claim 1 and are allowable for at least the same reason as explained with respect to Claim 7.

IV. Claim Rejections Under 35 U.S.C. § 103(a)

a. Claims 3, 9, and 15

In the Final Office Action of the parent application, Claims 3, 9, and 15 were rejected under 35 U.S.C. 103(a) as being unpatentable over Mattsson et al.

Claims 3 and 15 depend from Claims 1 and 13, respectively. Therefore, Mattsson et al., for the same reasons as explained with respect to Claims 1 and 13, is not prior art with respect to Claim 3 and 15, and Claim 3 and 15 are allowable for at least this reason.

Claim 9 depends from Claim 7 and is allowable for at least the same reasons as stated with respect to Claim 7.

Moreover, Claim 9 recites that “said resistance to the separation of said first duct and said second duct is at least three times greater than said resistance to the joining of said first duct and said second duct.” Mattsson et al. does not provide a locking mechanism and therefore does not provide more than minimal resistance to separation of ducts 11 and 21. Therefore, Claim 9 is independently allowable for at least this reason.

V. New Claims

New Claims 23 and 24 depends from Claim 1 and are therefore allowable as being dependant on an allowable base claim.

New Claims 25 and 26 depends from Claim 7 and are therefore allowable as being dependant on an allowable base claim.

New Claim 27 contains recitations that are supported by the disclosure and drawings of US Patent Application Serial No. 09/223,044, from which the instant application claims priority. The filing date of US Patent Application Serial No. 09/223,044 predates the filing date of Mattsson et al. Therefore, New Claim 27 is allowable for at least this reason.

New Claims 28-31 depend from Claim 27 and are therefore allowable as being dependent on an allowable base claim.

New Claim 32 contains recitations that are supported by the disclosure and drawings of US Patent Application Serial No. 09/223,044, from which the instant application claims priority. The filing date of US Patent Application Serial No. 09/223,044 predates the filing date of Mattsson et al. Therefore, New Claim 32 is allowable for at least this reason.

New Claims 33-37 depend from Claim 32 and are therefore allowable as being dependent on an allowable base claim.

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Conclusion

For the above reasons, Applicants respectfully request allowance of Claims 1-31.
Should the Examiner have any questions concerning this response, the Examiner is invited to call the undersigned at (408) 453-9200.

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Respectfully submitted,



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In the Claims

Please amend Claims 1, 4, 5, 7, 10, 11, 13, and 16 as follows.

1. (Amended) A duct joining system, comprising:

a first duct having a male end[, said first duct having a first bead on said male end];

a flexible seal and locking mechanism retained on said male end of said first duct

[between said first bead and an end of said first duct]; and

a second duct having a female end having a first cross sectional area and a [second] first bead of a second cross sectional area that is greater than said first cross sectional area, said second duct may be joined to the first duct by sliding said female end over said male end, said flexible seal and locking mechanism being compressed within said first cross sectional area, said flexible seal and locking mechanism expanding into said [second] first bead to form both a seal and a mechanical lock that provides resistance to the separation of said first duct and said second duct greater than [the] a resistance to the joining of said first duct and said second duct.

4. (Amended) The duct joining system of Claim 1, [wherein said] further comprising a second [first] bead positioned after said flexible seal and locking mechanism that acts as a stop bead to ensure said second duct is properly positioned with said first duct when said first duct and said second duct are joined.

5. (Amended) The duct joining system of Claim [1] 4, further comprising a third bead on said first duct located between said flexible seal and locking mechanism and said end of said first duct, wherein said third bead has a diameter that is less than the diameter of said [first] second bead.

7. (Amended) A duct joining system comprising:

a first duct having a female end[, said first duct having a first bead on said female end];

a flexible seal and locking mechanism retained within said female end of said first duct [between said first bead and an end of said first duct]; and

a second duct having a male end having a first cross sectional area and a [second] first bead of a second cross sectional area that is less than said first cross sectional area, said second duct may be joined to the first duct by sliding said female end over said male end, said flexible seal and locking mechanism being compressed by said first cross sectional area, said flexible seal and locking mechanism expanding into said [second] first bead to form both a seal and a mechanical lock that provides resistance to the separation of said first duct and said second duct greater than [the] a resistance to the joining of said first duct and said second duct.

10. (Amended) The duct joining system of Claim 7, [wherein said] further comprising a second [first] bead positioned after said flexible seal and locking mechanism that acts as a stop bead to ensure said second duct is properly positioned with said first duct when said first duct and said second duct are joined.

11. (Amended) The duct joining system of Claim [7]10, further comprising a third bead on said first duct located between said flexible seal and locking mechanism and said end of said first duct, wherein said third bead has a diameter that is greater than the diameter of said [first] second bead.

13. (Amended) A duct joining system comprising:
a first duct having a male end[, said first duct having a first bead on said male end];
a flexible seal and locking mechanism retained on said male end of said first duct [between said first bead and an end of said first duct]; and

a flexible duct that may be joined to said first duct by sliding said flexible duct over said flexible seal and locking mechanism, said flexible seal and locking mechanism expanding within said flexible duct to form both a seal and a mechanical lock that provides resistance to the separation of said first duct and said flexible duct greater than [the] a resistance to the joining of said first duct and said flexible duct.

16. (Amended) The duct joining system of Claim 13, further comprising a [second] bead on said first duct located between said flexible seal and locking mechanism and said end of said first duct[, wherein said second bead has a diameter that is less than the diameter of said first bead].

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